

Date: Tuesday, 10/30/2007 2:40:35 PM  
User: Kim Johnston

Process Sheet

SPHIT-1

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : BLADE  
Job Number : 35435  
Estimate Number : 10327  
P.O. Number : N/A Part Number : D2741  
This Issue : 10/30/2007 S.O. No. : N/A Drawing Number : D2741 REV C  
Prsht Rev. : NC Project Number : N/A  
First Issue : N/A Type : MACHINED PARTS Drawing Revision : C  
Previous Run : 33083 Material : N/A  
Written By : Due Date : 11/15/2007 Qty: 10 Um: Each  
Checked & Approved By :  
Comment : Est Rev: D 00.11.15 Removed P/O turning - in house  
processEC  
Est Rev: E 06-03-20 As Per Rev C  
JLM  
Est Rev: F 06.04.20 Added grinding after heat treating E  
C

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 M4130NB0500X03000 4130 Bar 0.5 x 3.0"



Comment: Qty.: 1.2118 f(s)/Unit Total : 48.4722 f(s)

4130 BAR 0.5 x 3.0"

Material: 4130 steel bar 0.50" x 3.00"

Batch:

M 105355 x 33 pcs

~~M 101314 x 4 pcs~~

M 101314 x 4 pcs

M 106274 x 4 pcs

2.0 BAND SAW BAND SAW



Comment: BAND SAW

Cut blanks 13.850" long +0.063" -0.000"

JL 07/12/02

3.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

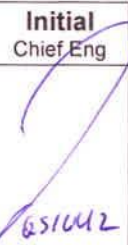

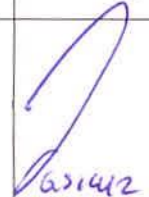

1-Machine per folio FA108

JL 07/12/02

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: 2 Date: 08/01/16  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07/12/03	3	1 part blank was cut too short and didn't clean at the back causing holes to be off by .020 RC: blank cut too short	 651042	Scrap: replace Qty 1 B m105355	SL 07/12/03	 07-12-03	 651042	 07-12-03

NOTE: Date & initial all entries



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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 35435

Part Number: D2741

Job Number:



Seq. #:

Machine Or Operation:

Description:

4.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

JL 07/12/02

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

25 07/12/02 (40)

6.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Deburr

2-Bend per Dwg D2741

JSB 07/12/04  
07/12/04 (40) SA 07-12-04 (40)

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

cauter  
7/12/04 (40)

8.0

OUTSIDE SERV.30

OUTSIDE SERVICES-MACH



Comment: Sub-Contracting PURCHASING

Issue P/O: 5193

Harden material as per Dwg D2741

Min. Ultimate Tensile Strength = 152 ksi (30-40 HRC)

Min. Yield Tensile Strength = 141 ksi

Test report or Certification required

CL 07/12/05  
(40)

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive and Inspect for transit damage

Ensure Test report or Certification attached

CL 8/1/16 (40)

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/01/16 (40)

11.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Pass in deburring machine

2-Grind off edges

B 8-1-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: D Date: 08/01/16  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 35435

Part Number: D2741

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

POWDER COATING

POWDER COATING



M106379



(10X)

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

m-h 08/01/16

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08/01/16

(10)

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

08/01/16 (10)

15.0

QC21

FINAL INSPECTION/W/O RELEASE



(10)

Comment: FINAL INSPECTION/W/O RELEASE

08/01/16

Job Completion



08-06-16

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

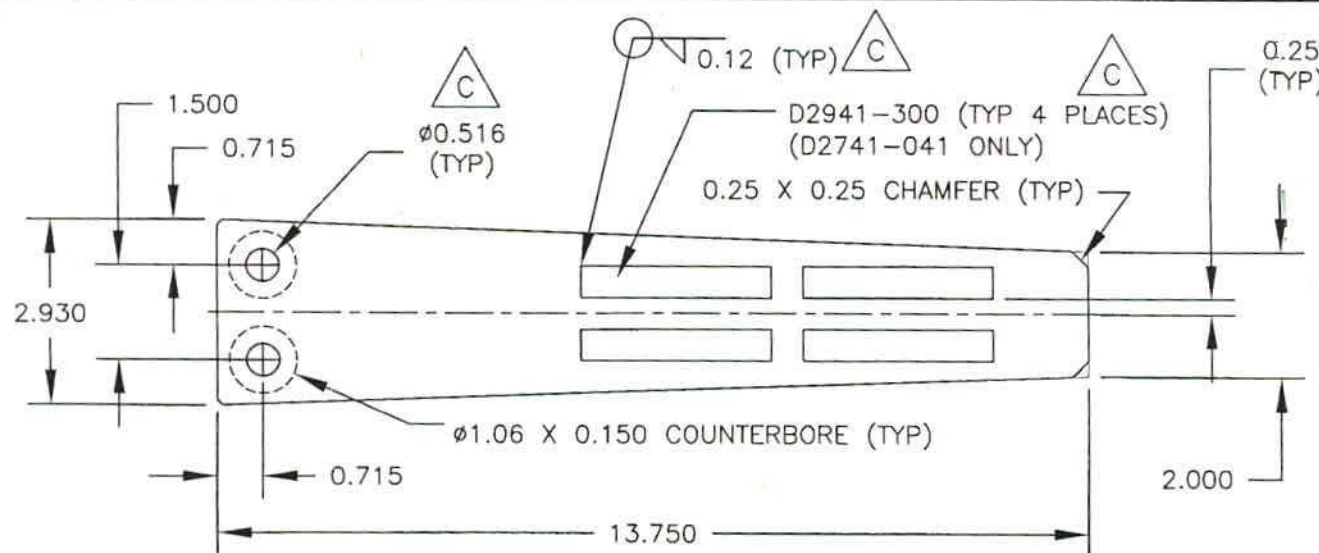
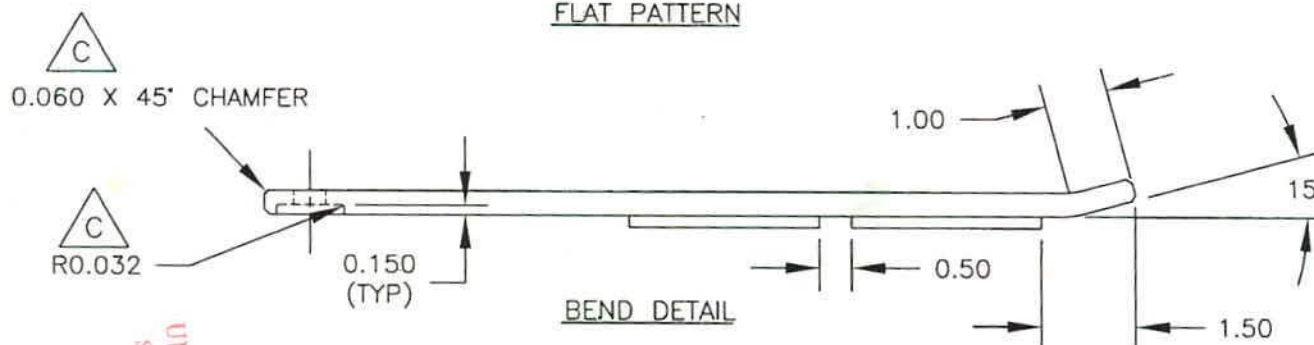
**NOTE:** Date & initial all entries





**DART****RELEASED**  
06.02.07

DESIGN	94	DRAWN BY	94	DART AEROSPACE USA, INC.
CHECKED	94	APPROVED	94	PORT HADLOCK, WA
DATE	06.01.12	TITLE	BLADE	REV. C
A	98.04.16	DRAWING NO.	D2741	SHEET 1 OF 1
B	98.09.01	CHANGE C'SINK TO C'BORE		SCALE
C	06.01.12	LARGER HOLE, ADD RADIUS AND CHAMFER ADD -041/-043 OPTIONS		1:3

FLAT PATTERNBEND DETAIL

WORK ORDER  
35435  
UNCONTROLLED COPY  
SUBJECT TO ACCEPTANCE  
WITHOUT NO  
SHOP COPY  
RETURN TO  
ENGINEERING  
D2741 BLADE

- 1) MATERIAL: AISI 4130 STEEL 0.375 THICK  
MIN. ULTIMATE TENSILE STRENGTH = 152 ksi (34-40 HRC)  
MIN. YIELD TENSILE STRENGTH = 141 ksi
- 2) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.030 TO 0.060
- 6) TO MAKE D2741-041, WELD D2941-300 (4) AS SHOWN ABOVE.  
REMOVE POWDER COAT FROM SURFACE OF D2941-300
- 7) TO MAKE D2741-043, WELD 7560 HARDCOAT ROD INSTEAD OF D2941-300





**VAC AERO**  
INTERNATIONAL INC.

# PACKING SLIP

OAK 93756-1



HEAD OFFICE  
1371 SPEERS ROAD, OAKVILLE, ONTARIO  
CANADA L6L 2X5  
TEL: (905) 827-4171 FAX: (905) 827-7489



QUEBEC DIVISION  
7450 RUE VERITE STREET, ST. LAURENT, QUEBEC  
CANADA H4S 1C5  
TEL: (514) 334-4240 FAX: (514) 334-6269

GST No.: R105468102

01/15/2008

MM / DD / YYYY

PAGE: 1

BILL TO: 1DAR01  
DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
01/15/2008		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
00005193		COD

LN	PART NO	DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	B/O QTY
01	D2741	B35435 BLADE  Process Specifications: Procedure: 4161 HARDENED PER DWG. D2741 TO 152 KSI MINIMUM 100% HARDNESS TESTED PER ASTM E-18 HRC: 34-40 MATERIAL: 4130	EA	40	40	0
02	MC	MINIMUM CHARGE 140 LBS @ \$2.26/LB		1	1	0

No claims for shortage in weight or count will be entertained, unless presented within 5 working days after receipt of materials by customer.



VACUUM BRAZING - HEAT TREATING - SPECIAL PROCESSING - FURNACE EQUIPMENT  
TURBINE COMPONENT OVERHAUL - PLASMA AND OTHER COATINGS



HEAT



**VAC AERO**  
INTERNATIONAL INC.

**RELEASE NOTE**

GST No. : R105468102

OAK 93756-1



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1371 SPEERS ROAD, OAKVILLE, ONTARIO  
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TEL: (905) 827-4171 FAX: (905) 827-7489



2009 WYECROFT ROAD, UNIT B  
OAKVILLE, ONTARIO  
CANADA L6L 6J4  
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K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
01/15/2008		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
00005193		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D2741	B35435 BLADE	EA	40	40	
<p>Process Specifications: Procedure: 4161 HARDENED PER DWG. D2741 TO 152 KSI MINIMUM 100% HARDNESS TESTED PER ASTM E-18 HRC: 34-40 MATERIAL: 4130</p>					
<p><b>100% HARDNESS TESTED</b> 40 pcs. 38/39 HRC</p>					
<p>OK</p>					
<p>V.A.I.O. TH. 25 Q.C.</p>					

I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

*James Robinson*  
Authorized Q.C. Inspector



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT  
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS



HEAT  
TREATING